

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte YEUN-JONG CHOU and LOREN L. BARBER JR.

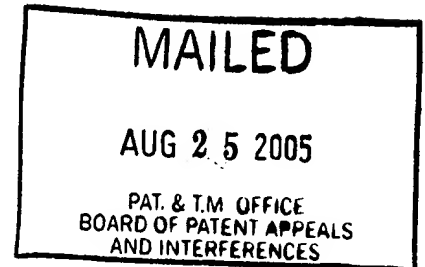
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Appeal No. 2005-1365  
Application 09/954,751

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ON BRIEF

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Before FRANKFORT, McQUADE, and BAHR, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 and 3 through 13. Claims 14 through 16, the only other claims remaining in the application, have been withdrawn from further consideration as being directed to a non-elected invention. Claim 2 has been canceled.

Appellants' invention relates to a unitary brush that has abrasive particles secured to at least some of its bristles. As set forth on page 3, lines 9-14, of the specification, a "unitary brush" is defined to be

any brush that is comprised of a hub or body and bristles which are attached to the body or hub and are formed of the same mass of material as the hub or body without adhesive bonding or mechanical fastening of bristles to the hub or body portion. Exemplary unitary brushes are injection molded or formed of an individual cut segment or a stack of cut segments of sheet material that are die cut, water jet cut, or laser cut to form single segments of hub portions bearing a plurality of bristles.

Regarding application of the abrasive particles to the bristles, appellants make clear that at least some of the bristles of the unitary brush are coated with a coating (adhesive 8) that bonds abrasive particles (6) to the outer surface of the bristles (page 4, lines 21-23). In a further embodiment, a second coating may be applied over the abrasive particles and the first coating to the extent to which it may be exposed (page 7, lines 6-9).

Independent claim 1 is representative of the subject matter on appeal, and a copy of that claim can be found in the Appendix to appellants' brief.

The prior art references of record relied upon by the examiner as evidence of obviousness under 35 U.S.C. 103 are:

Barber, Jr. et al. (Barber '794)	5,518,794	May 21, 1996
Johnson et al. (Johnson '067)	5,679,067	Oct. 21, 1997

Claims 1 and 3 through 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson '067 in view of Barber '794.

Rather than reiterate the examiner's statement of the above-noted rejection and the conflicting viewpoints advanced by appellants and the examiner regarding the rejection, we refer to the final rejection (mailed October 24, 2003) and the examiner's answer (mailed November 3, 2004) for the reasoning in support of the rejection and to appellants' amended brief (filed March 29, 2004) and reply brief (filed December 27, 2004) for the arguments to the contrary.

#### OPINION

Prior to addressing the merits of the examiner's rejection, we note appellants' indication on page 9 of the brief, under the Grouping of Claims heading, that the appealed claims "will stand or fall together." Thus, we have selected claim 1 as being

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representative of this grouping and will decide the appeal on the basis of that claim alone, with claims 3 through 13 standing or falling on the outcome of our determination regarding claim 1.

Our evaluation of the obviousness issues raised in this appeal has included a careful assessment of appellants' specification and claims, the applied prior art references, and the respective positions advanced by appellants and the examiner. As a consequence of our review, we have made the determination that the evidence relied upon by the examiner is sufficient to support a conclusion of obviousness under 35 U.S.C. § 103 with respect to claims 1 and 3 through 13 on appeal. Our reasons in support of that determination follow.

In rejecting the claims on appeal under 35 U.S.C. § 103(a) based on the collective teachings of Johnson '067 and Barber '794, the examiner has found that Johnson '067 discloses a unitary abrasive brush having a backing/body and a plurality of bristles extending therefrom, wherein the backing and bristles are integrally molded (e.g., injection molded) using a polymeric material which includes abrasive particles dispersed therein. See, e.g., column 6, lines 8-16. The examiner notes that the brush of Johnson '067 differs from appellants' claimed subject

matter in that it includes abrasive particles interspersed throughout the molded bristle structures, instead of having the abrasive adhered to the surface of the bristles as required in the claims on appeal. To address that difference, the examiner looks to Barber '794, urging that it discloses a brush having bristles (e.g., as seen in Figure 4) wherein each bristle is provided with a coating (14) of adhesive thermoplastic elastomer carrying abrasive particles (col. 2, lines 37-41), and may also be coated with a second plastic (adhesive) coating (col. 23, lines 57-59) applied over the particles and first coating. From the combined teachings of the applied patents, the examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Johnson '067 with the first and second coatings of adhesive and abrasive particles, rather than abrasive distributed throughout the bristles, as clearly taught by Barber '794, to prevent the bristles from taking a set shape, softening and losing their effectiveness.

Appellants contend that one skilled in the art would not combine the applied patents to arrive at the claimed invention. More particularly, appellants urge that the method of making brushes as set forth in Barber '794 and the method of making

brushes as described in Johnson '067 "are different and incompatible with each other" (brief, page 12) and that the motivation relied upon by the examiner for combining the references is based on hindsight reasoning and comes solely from the description of appellants' invention in their specification. We do not agree.

After a careful assessment of the applied prior art, we find ample suggestion in the teachings of Barber '794 for modifying the molded abrasive brush of Johnson '067 in the manner posited by the examiner. More particularly, we direct attention to the entire "Background Art" section of Barber '794 and the discussion therein of certain disadvantages associated with brushes formed using abrasive particles uniformly dispersed in a polymer matrix to make the bristles or filaments. As noted in column 2, lines 37-64, of Barber '794, the problems associated with abrasive-filled nylon bristle brushes are at least in part overcome by utilizing a composite abrasive filament comprising a preformed core "coated with an abrasive-filled thermoplastic elastomer." Such an arrangement is said to provide significantly higher tensile strength for the filaments, to allow for up to twice the loading of abrasive grains into the coating without exhibiting any significant reduction in flex fatigue resistance compared

with abrasive-filled nylon filaments, and to permit much higher levels of initial and continued abrasive action during abrasive cutting than would be possible with a brush having abrasive-filled filaments or bristles. In our view, the teachings of Barber '794 thus provide clear motivation and suggestion for modifying the abrasive-filled brush of Johnson '067 in the manner urged by the examiner.

Moreover, like the examiner, we also note that Johnson '067 (col. 17, line 54) discloses forming a unitary brush like that defined in clause (a) of claim 1 on appeal, i.e., without abrasive particles therein, and that in our opinion the teachings of Barber '794 would have made it obvious to one of ordinary skill in the art at the time of appellants' invention to coat the filaments or bristles of such a unitary brush with an abrasive material in the manner taught in Barber '794 so as to secure the benefits thereof highlighted in that patent.

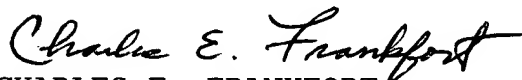
In light of the foregoing, we will sustain the examiner's rejection of claim 1 under 35 U.S.C. § 103. It follows from appellants' grouping of claims (brief, page 9) that the

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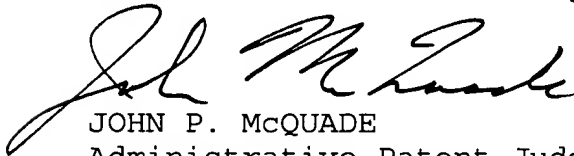
examiner's rejection of claims 3 through 13 under 35 U.S.C. § 103 based on the combined teachings of Johnson '067 and Barber '794 will likewise be sustained.

Thus, the decision of the examiner to reject claims 1 and 3 through 13 of the present application under 35 U.S.C. § 103(a) is affirmed.

AFFIRMED



CHARLES E. FRANKFORT  
Administrative Patent Judge



JOHN P. McQUADE  
Administrative Patent Judge



JENNIFER D. BAHR  
Administrative Patent Judge

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